

REMARKS

Upon entry of the instant amendment, claim 1 will remain pending in the above-identified application and stand ready for further action on the merits.

In this Amendment, claim 1 has been amended. Support for the added recitations in claim 1 occurs in original claims 2-6 (*which claims are cancelled herein to prevent a redundancy with amended claim 1*) and throughout the originally filed specification (e.g., *see page 7, paragraph [0010]; pages 22-23, paragraphs [0045] – [0046], and pages 49-50, paragraph [0089]*).

Accordingly, the present amendments to the claims do not introduce new matter into the application as originally filed. As such entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

Examiner Interviews

The undersigned appreciates the Examiner's courtesy in holding two separate telephone interviews in the matter of the instant case, the first one on Wednesday, August 5, and the second one (a follow-up interview) on Friday, August 7, 2009, wherein the Examiner and the undersigned discussed the outstanding prior art rejections, and possible amendments to claim 1.

Claim 1 as amended herein is in-line with discussions occurring in the two interviews. While no specific agreement was reached in the interviews as to allowability of amended claim 1, the undersigned believes and submits that amended claim 1 is both novel and non-obvious over the cited art of record.

Claim Rejection under 35 U.S.C. § 112, First Paragraph

Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph, based on an allegation that the specification, while being enabling for a process having the specific parameters, *i.e.*, molar ratios, temperatures, and limit of oxygen in ppm, does not reasonably provide enablement for any type of process for making an aromatic polycarbonate in the molten state.

Reconsideration and withdraw of the rejection is respectfully requested based on the following considerations.

Legal Standard for Enablement

The Federal Circuit has repeatedly held that “the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation’.” *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Nevertheless, not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a “reasonable correlation” to the scope of the claims. *See, e.g., In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

As concerns the breadth of a claim relevant to enablement, the only relevant concern should be whether the scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims. *In re Moore*, 439 F.2d 1232, 1236, 169 USPQ 236, 239 (CCPA 1971). How a teaching is set forth, by specific example or broad

terminology, is not important. *In re Marzocchi*, 439 F.2d 220, 223-24 169 USPQ 367, 370 (CCPA 1971).

Accordingly, based on the amendment made herein to claim 1, withdraw of the outstanding rejection is respectfully requested at present. In this regard, instantly amended claim 1 recites a variety of parameters, such as those noted by the USPTO in setting forth the rejection, and is fully and completely enabled by the instant specification.

Claim Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by **Hachiya US'273** (US 5,972,273) or **Hachiya et al. US'683** (US 5,932,683) or **Hachiya et al. US'156** (US 5,852,156) or **Hachiya et al. US'254** (US 5,719,254).

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Hachiya US'273** (US 5,972,273) or **Hachiya et al. US'683** (US 5,932,683).

Reconsideration and withdraw of each of the above rejections is respectfully requested based on the following considerations.

Legal Standard for Determining Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir.

2001) “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

MPEP § 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP § 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) *combining prior art elements according to known methods to yield predictable results;*

- (b) *simple substitution of one known element for another to obtain predictable results;*
- (c) *use of known technique to improve similar devices (methods, or products) in the same way;*
- (d) *applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;*
- (e) *“obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success*
- (f) *known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;*
- (g) *some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP § 2143.03.

The Present Invention and Its Advantages

Instantly pending claim 1 recites as follows:

A method for producing a high quality aromatic polycarbonate having a number average molecular weight of from 5,000 to 100,000, which is free from discoloration and exhibits both (1) a small variation in molecular weight and (2) a small variation of \pm 1% in terminal hydroxyl group ratio; which method comprises subjecting to molten state polymerization a mixture of an aromatic dihydroxy compound and a diaryl carbonate in the presence of a catalyst,

said mixture of the aromatic dihydroxy compound and the diaryl carbonate being obtained by a mixing step in which an aromatic dihydroxy compound and a catalyst, each being in at least one state selected from the group

consisting of a solid state and a liquid state, are added to a diaryl carbonate in a molten state in the presence of an inert gas, wherein said inert gas has an oxygen concentration of not more than 10 ppm, thereby dissolving said aromatic dihydroxy compound and said catalyst in said molten diaryl carbonate,

wherein said mixing step is performed at a temperature of from 80 to 250 °C in which the molar ratio of the diaryl carbonate to the aromatic dihydroxy compound is in the range of from 1.05 to 1.20, wherein the molar ratio has a tolerable variation in the range of ± 0.005 ,

wherein the mixing in said mixing step is accompanied by a transesterification reaction between said aromatic dihydroxy compound and said diaryl carbonate, wherein the conversion of the aromatic dihydroxy compound is from 10 to 80 %, and

wherein, before said mixing step, said aromatic dihydroxy compound is treated with an inert gas having an oxygen concentration of not more than 10 ppm.

As taught in the instant specification at page 7, paragraph [0010],

[0010] A task of the present invention is to provide a method for efficiently producing a high quality aromatic polycarbonate which is free of discoloration and which exhibits only a small variation of both the terminal hydroxyl group ratio and the molecular weight.

That is, the instant invention as claimed is concerned with providing a method, wherein one can efficiently produce a high quality aromatic polycarbonate that is not only free from discoloration, but which also exhibits both (1) a small variation in molecular weight and (2) a small variation of $\mp 1\%$ in terminal hydroxyl group ratio.

Distinctions over the Cited Art

The cited art being applied against the instant claims by the USPTO (*i.e.*, *Hachiya US'273*, *Hachiya et al. US'683*, *Hachiya et al. US'156* and *Hachiya et al. US'254*) fails to

teach or provide for each of the limitations recited in instant 1 and is therefore incapable of anticipating instant claim 1. The cited art also fails to render obvious that with the claimed method one can advantageously produce a high quality aromatic polycarbonate having a number average molecular weight of from 5,000 to 100,000, which is free from discoloration and exhibits both (1) a small variation in molecular weight and (2) a small variation of $\mp 1\%$ in terminal hydroxyl group ratio.

The Examiner is also respectfully requested to review **Example 1**, and **Comparative Examples 1-3**, set forth at pages 48-52 of the instant specification, which support Applicants' contention that with the method of the present invention, a high quality aromatic polycarbonate can be efficiently produced, wherein the aromatic polycarbonate exhibits no discoloration and has only a small variation of both the terminal hydroxyl group ratio and the molecular weight.

The achievement of such results with the instantly claimed invention is in no way rendered obvious by the cited art of record. Any contentions of the USPTO to the contrary must be reconsidered at present as they are not sustainable.

CONCLUSION

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that pending claim 1 is allowable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881 at

the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: August 10, 2009

Respectfully submitted,

By 

John W. Bailey

Registration No.: 32,881

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant